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Report to the Chairman, Subcommittee on Oversight and Investigations, Committee on Energy and Commerce House of Representatives

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VEHICLE EMISSIONS

EPA Program to Assist Leaded-Gasoline Producers Needs Prompt Improvement

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Resources, Community, and
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The Honorable John D. Dingell
Chairman, Subcommittee on Oversight
and Investigations,
Committee on Energy and Commerce
House of Representatives

Dear Mr. Chairman:

As requested in your November 25, 1985, letter and in accordance with subsequent discussions with your office, we have reviewed certain Environmental Protection Agency management controls over its lead rights banking program. This report also discusses the legal basis of the program.

As arranged with your office, unless you publicly release its contents earlier, we will make the report available to other interested parties 30 days after its issue date. At that time copies of the report will be sent to appropriate congressional committees; the Director, Office of Management and Budget; the Administrator, Environmental Protection Agency; and other interested parties.

Sincerely yours,

J. Dexter Peach

J. Dexter Peach
Director

Executive Summary

Purpose

Lead has been linked to a variety of health problems. The Environmental Protection Agency (EPA) has attempted to reduce adverse health effects by progressively reducing the allowable lead content of gasoline, thereby reducing vehicles' lead emissions into the atmosphere. To help the industry meet the more stringent lead content standards, EPA established the lead rights "banking" program. Because the banking program ends on December 31, 1987, it is essential that it be effectively and promptly administered to control lead usage so that the anticipated health and other benefits of lead reduction can be realized.

Concerned about certain EPA controls over, and the legality of, the lead banking program, the Chairman, Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, asked GAO to examine (1) the extent to which EPA verifies the volume of leaded gasoline produced and the amount of lead used in production—key items reported to EPA by program participants and used in computing lead rights, (2) the timeliness of EPA's processing of participants' reports, (3) enforcement actions taken against program violators, and (4) the legal basis for the lead banking program.

Background

In March 1985, EPA issued a regulation reducing the existing lead content standard of 1.10 grams per leaded gallon of gasoline to 0.50 grams on July 1, 1985, and to 0.10 grams on January 1, 1986. In conjunction with these more stringent standards, EPA tried to lower the cost burden and provide flexibility for the gasoline industry in meeting the new standards by establishing a lead banking regulation for calendar years 1985-87. In principle, the program was designed to assist those participants who needed to upgrade their equipment to meet the 0.10-gram standard and to provide all participants flexibility in planning for and meeting the reduced standard. It allowed program participants who were producing or selling leaded gasoline in 1985 at a lower concentration of lead per gallon than the applicable 1.10-gram and 0.50-gram standards to bank their lead-gram rights thus earned. After December 31, 1985, no additional lead rights could be earned. Banked rights could be used or transferred (sold) to other participants for use in producing or selling leaded gasoline in excess of the lead content standards from the second quarter of 1985 through the end of 1987. EPA expected that banking would provide participants net savings of $226 million, while not increasing the total allowable amount of lead used during the 1985-87 period.

Participants in the lead rights banking program must submit quarterly reports to EPA showing, among other things, the total grams of lead used, the total gallons of leaded gasoline produced, the amount of rights banked and/or transferred to others, and the beginning and ending balance of their lead bank accounts. EPA is responsible for reviewing the reports and enforcing penalties against violators. (See ch. 1.)

Results in Brief

EPA has established a system of controls over the lead rights banking program that relies on data reported by program participants. EPA checks their reports to identify mathematical errors and violations of regulatory requirements that can be ascertained by reviewing the participants' reports. However, EPA has not established a requirement to verify the data submitted in these reports, nor has it completed its review and processing of these reports for the first year of the program, which ended December 31, 1985. Although EPA has identified potential violations of the banking program requirements, it has delayed enforcement actions pending the development of a lead rights banking enforcement policy. Erroneously reported data, the backlog in reviewing and processing reports, and delays in initiating enforcement actions could result in the use of lead in amounts exceeding allowed levels.

EPA recognizes the need to strengthen its controls in these areas and has taken or plans to take a number of actions to address them. However, because of the relatively short time available to strengthen these controls and correct problems before the program ends, EPA needs to expedite these actions and monitor their effectiveness.

EPA has legal authority for implementing the lead banking program. The authority is based on a provision of the Clean Air Act authorizing the EPA Administrator to control or prohibit the manufacture, introduction into commerce, or sale of any fuel or fuel additives that may endanger public health or welfare or impair the performance of emission control devices.

Principal Findings

Data Not Verified

EPA controls the lead banking program primarily through its review of participants' reports. While EPA routinely checks these reports for mathematical errors, reported violations of the lead standards, and disagreement between the amount of lead rights reported as transferred by the transferor and transferee, it has not established a requirement to verify the data reported. Two items—lead used in production and gallons of leaded gasoline produced—are particularly important because they are the bases for computing the actual lead content of the gasoline produced and lead rights. Participants have misstated these items in the past. For example, in one case the participant reported to EPA that it had overstated production over four quarters resulting in the use of about 300 million grams of lead in excess of standard.

EPA has recognized the need to verify the reported data and has attempted unsuccessfully to obtain data from the states and the U.S. Department of Energy's Energy Information Administration, which might be used to corroborate the data submitted by the refiners. EPA is currently developing a methodology to audit participants to verify reported data and to assure compliance with program requirements. (See ch. 2.)

No Current Data on Banking

EPA has not completed its review and processing of participants' reports for the first year of the program. Thus, although the period for creating rights ended in December 1985, EPA has no complete, current data on the balance of lead rights available for use through the end of the program in 1987. Because companies have been making errors in their reports, the backlog in review and processing may allow the use or sale of invalid rights and the consequent increase in the lead content of gasoline. EPA is aware of the need to clear the backlog and has taken a number of actions to expedite the review process, such as contracting for a full-time computer analyst and revising data processing procedures. (See ch. 2.)

Enforcement Action Not Taken

EPA's review process has identified 25 potential violations of banking regulations. However, no enforcement actions have been initiated because EPA has not established an enforcement policy for banking violations.

EPA is drafting an enforcement policy and expects to begin enforcement action when the policy is finalized. (See ch. 2.)

Recommendations

GAO recommends that the EPA Administrator establish specific time frames to develop (1) a methodology for auditing participants to verify reported data and assure compliance with program requirements, and initiate such audits promptly and (2) an enforcement policy, including the identification of program violations, enforcement actions to be taken, and the penalties to be assessed, and take appropriate action against identified program violators. (See ch. 2.)

Because the lead rights banking program is scheduled to end by December 31, 1987, the time is short to strengthen program controls and to correct problems identified by these controls to prevent excess lead being emitted into the atmosphere. Therefore, GAO also recommends that the EPA Administrator require periodic reviews or assessments of agency actions taken in response to GAO's recommendations, as well as agency actions taken to expedite the review, processing, and reconciliation of participants' reports. If satisfactory progress is not being made, the Administrator should take further actions, such as assigning additional staff and/or further modifying computer capabilities. (See ch. 2.)

Agency Comments

GAO did not obtain official comments on this report. The views of responsible officials were obtained and are incorporated into the report where appropriate.

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Abbreviations

DOE	Department of Energy
EIA	Energy Information Administration
EPA	Environmental Protection Agency
GAO	General Accounting Office
gpig	grams per leaded gallon
OMS	Office of Mobile Sources
RCED	Resources, Community, and Economic Development Division

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Introduction

Since the 1920's, petroleum refiners have added lead to gasoline as a relatively inexpensive way to boost the octane rating (the antiknock characteristics of gasoline). However, lead in gasoline has been linked to a variety of health problems. It has been shown to increase blood lead levels, which have been linked to a variety of serious health effects in small children and to elevated blood pressure in adult males.

Since the 1970's, EPA has attempted to minimize the adverse health and environmental effects of lead in gasoline by issuing regulations reducing the allowable lead content of gasoline. On March 7, 1985, as part of its efforts to further reduce lead use, EPA issued a regulation under the authority of the Clean Air Act reducing the lead content of gasoline from the then existing 1.10 grams per leaded gallon (gplg) standard to 0.50 gplg in July 1985 and to 0.10 gplg in January 1986.

A February 1985 EPA cost-benefit analysis weighed the adverse implications of leaded gasoline against the costs of reducing lead in gasoline. The analysis estimated that, assuming no misfueling (using leaded gasoline in vehicles designed for unleaded), the 0.10 gplg standard would result in $49 billion in benefits at an estimated cost to the refining industry of $3.5 billion (in 1983 dollars) during calendar years 1986 through 1992. The benefits result primarily from the reduction in cardiovascular diseases associated with elevated blood pressure and also from reduction in automotive maintenance costs and increased fuel economy. The costs, according to the analysis, result primarily from the additional processing of gasoline components necessary to meet octane demands since lead can no longer be added in amounts previously used to boost octane.

To provide industry greater flexibility and lower costs in meeting the more stringent lead standards, EPA issued a regulation on April 2, 1985, establishing a lead rights banking program for the 3-year period ending December 31, 1987 (50 Fed. Reg. 13116). The regulation allowed refiners and importers who were producing or selling leaded gasoline in calendar year 1985 at a lower concentration of lead per gallon than the applicable 1.10 gram and 0.50 gram standards, to "bank" their lead-gram rights thus earned.[1] Lead rights could be earned and deposited during each quarter of 1985. After December 31, 1985, no additional lead rights could be earned. They could then use their lead rights—or transfer (the

[1]EPA has defined refiners to include blenders (persons who increase the volume of gasoline by adding a blending component such as alcohol). Hereinafter in this report, refiners, blenders, and importers are referred to as refiners.

rights could be sold) them for other refiners' use—as standards are enforced from April 1, 1985, through December 31, 1987. By drawing on their earned or transferred rights, refiners could produce gasoline with more lead than the 1.10 gram standard in the second quarter of 1985, the 0.50 gram standard in the third and fourth quarters of 1985, and the 0.10 gram standard during calendar years 1986 and 1987.

For example, if a refiner produced 100,000 gallons of leaded gasoline in the second quarter of 1985, when the standard was 1.10 gplg, it would be allowed to use 110,000 grams of lead in production (100,000 x 1.10 gplg). If it actually used 100,000 grams of lead in production, it could bank the difference of 10,000 grams. In the third quarter the lead standard decreased to 0.50 gplg. If the refiner produced 50,000 gallons of leaded gasoline, the allowable lead would be 25,000 grams (50,000 x .50 gplg). However, if the refiner withdrew the 10,000 grams from the bank, it could use 35,000 grams of lead in production. The refiner also could transfer all or part of the banked lead rights in its account to another refiner.

In issuing the banking regulation, EPA stated that the program would significantly assist those refiners who may need to upgrade equipment to meet the 0.10 gplg standard by allowing them to use banked lead rights while making the equipment modifications. EPA also stated that the program would benefit all refiners by providing additional flexibility in planning for and meeting the reduced standards and in meeting unexpected problems, such as equipment failures. At the same time, EPA stated that banking would not increase the total lead usage that would otherwise be allowed during the 1985-87 period.

EPA also estimated that banking would result in significant savings to refiners because the production cost savings of using extra lead when the standard is 0.10 gplg will be greater than the production cost of reducing the lead used under the higher standards. Assuming that refiners would begin banking lead rights during the first quarter of calendar year 1985, and that 9.1 billion grams would be banked during 1985, EPA estimated that the banked lead rights would save refiners about $226 million.

Program Requirements and Administration

Under the lead banking regulations, each refinery must submit, within 15 days after the close of the calendar quarter, a quarterly report to EPA that shows, among other things, the total gallons of leaded and unleaded

gasoline produced, the total grams of lead used in producing leaded gasoline, and the average lead content of each gallon of leaded gasoline produced. The refinery must also report the amount of rights banked, the amount of rights transferred to or from the account of another, and the number of rights in the refiner's account at the beginning and end of each quarter. Transfers between companies must also be supported by documentation showing agreement of the parties to the transfer.

Administration of the lead rights banking program is carried out centrally by EPA's Field Operations and Support Division, Office of Mobile Sources, under the EPA Assistant Administrator for Air and Radiation. The Division's Field Operations and Compliance Policy Branch is responsible for reviewing quarterly reports and computer processing while the Investigations and Enforcement Branch is responsible for enforcement activities.

Status of Banking

The latest available EPA preliminary data as of June 16, 1986, shows considerable lead banking activity over the first three quarters of 1985 with about 9 billion grams in the bank.

Table 1.1: Lead Rights Banking-1985
(Billions of Grams)

Quarter Ending	Deposits	Withdrawals	Balance
March 31, 1985	3.40	0	3.40
June 30, 1985	5.00	.10	8.30
Sept. 30, 1985	1.09	.43	8.96

Objectives, Scope, and Methodology

As agreed with the Office of the Chairman, Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, we assessed the adequacy of EPA's lead rights banking program controls over (1) the verification of leaded gasoline production and lead content data reported by refineries, (2) the timeliness of EPA's processing of refineries' reports, and (3) enforcement actions taken against program violators. As further agreed, we also analyzed the legal basis of the lead banking program.

We approached each objective by reviewing pertinent provisions of the Clean Air Act and the lead banking regulations and policies and by discussing the issues with EPA headquarters officials. In addition, we performed the following work to obtain information on specific issues.

Our work on EPA controls over the verification of data reported by refineries included an examination of two key figures that are used to determine lead rights—the amount of leaded gasoline produced and the amount of lead actually used in production. To determine the reasonableness of leaded gasoline production, we compared leaded gasoline production data reported by refiners to the Department of Energy's Energy Information Administration (DOE/EIA) for the second quarter of 1985 (ending June 30, 1985) with data reported to EPA during the second quarter and entered into its data base as of February 1, 1986. We identified 160 refineries (not including blenders and importers) as reporting to both DOE/EIA and EPA and compared reported leaded gasoline production.

We tested the reasonableness of lead used in production by comparing second quarter 1985 lead purchases reported to EPA by a random sample of 128 of 195 refineries (not including blenders and importers) to the sales of lead as reported to EPA by lead manufacturers.

To assess EPA's processing of refiner report data, we examined EPA's manual and computerized processing procedures and related controls. We randomly sampled 374 of 724 second quarter 1985 reports to determine the types and extent of errors being made by refiners and to review EPA's manual controls for identifying these errors. We reviewed EPA's computer processing controls by discussing with EPA officials their procedures for processing data and identifying errors in reporting and by reviewing computer-generated error reports. We obtained automated copies of the EPA lead phasedown data file containing first and second quarter 1985 information as of February 1, 1986. We manipulated the data, by applying tests to determine the accuracy of the EPA-generated error reports. We did not determine the reliability of the data. We did, however, trace back GAO-identified reporting inconsistencies to the EPA source documents. We also discussed the status of processing quarterly reports with EPA officials and examined status reports.

To assess EPA's lead banking enforcement actions, we reviewed applicable law and discussed enforcement policies and the identification and disposition of program violations with EPA officials responsible for enforcing the lead rights banking program.

To determine the legal basis for the lead rights banking program, we reviewed applicable legislation, regulations, legal cases, and EPA procedures in promulgating the regulations. In order to maintain the confidentiality of the information we examined, we have not identified the names of the companies we reviewed.

Our review work was conducted between December 1985 and April 1986. We discussed the lead banking program with EPA program officials and have included their comments where appropriate. However, in accordance with the requester's wishes, we did not obtain the views of EPA program officials on our conclusions, nor did we request official agency comments on a draft of this report. Except as noted here, this review was conducted in accordance with generally accepted government auditing standards.

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Lead Banking Controls Should Be Strengthened

EPA controls the lead rights banking program primarily by reviewing the quarterly reports received from refineries. (See app. I.) EPA checks these reports for mathematical errors, discrepancies between reported lead rights transfers, and violations of program requirements that can be ascertained from a review of the quarterly reports. However, EPA has not required that the data submitted by refineries be verified, and EPA's review and processing of refineries' quarterly reports is backlogged. In addition, enforcement action against potential program violators has been delayed because an enforcement policy has not been developed. Because EPA recognizes the limitations of its controls over the program, it recently has planned or taken a number of actions to verify reported data and expedite report review and processing and is drafting an enforcement policy.

Erroneously reported data, coupled with delays in identifying reporting errors and initiating enforcement actions, can result in excess lead being emitted into the atmosphere. To the extent this occurs, the health benefits that EPA estimated from a lead reduction program will be diminished.

EPA Does Not Verify Key Data Reported by Refineries

The quarterly reports submitted by refiners that are used by EPA to control the program show, among other things, the amount of lead purchased, the lead rights transferred, the amount of lead used in production, and the volume of gasoline produced. EPA reviews these reports both manually and with a computer. Manual checks include checking for violations of the regulations, such as the average lead content of the gasoline produced being in excess of standard, completeness of reports, the presence of supporting documentation for lead rights transfers, and, until processing fourth quarter 1985 reports, arithmetic errors. EPA also follows up on nonreporting refineries. Through a computer, EPA cross-checks all transfers of lead rights to assure consistent reporting by the transferor and transferee, recalculates arithmetic computations, performs checks to assure that regulatory restrictions on banking are not exceeded, and compares lead inventory and banking balances between quarters. Our review of these manual and computer checks showed that EPA's checks adequately accomplish these functions.

However, our review showed that except for the lead rights transferred, EPA has not established a requirement to verify the data reported. Two of the items reported—volume of leaded gasoline produced and amount of lead used in production—are of particular importance since they

serve as the bases for the computation of the actual average lead content of gasoline and lead rights. Understatement of lead used and/or overstatement of the volume of leaded gasoline produced could result in understating the lead content of gasoline produced and generating erroneous lead rights, both of which have the potential for resulting in excess lead being released into the atmosphere.

Refiners have misstated production and/or lead usage data in the past. According to EPA's Chief, Investigations and Enforcement Branch, during the last quarter of 1983 and three quarters of 1984, one refinery's quarterly reports erroneously overstated leaded gasoline production resulting in approximately 300 million grams of lead used in excess of the standard at that time. In this particular case, the company itself detected the false reporting (some company employees falsified the data) and reported it to EPA. According to EPA, indictments have been obtained against the employees and a fine of about $2.6 million has been proposed against the company. While this particular case occurred before the advent of banking, it indicates the potential for misstatement of production.[1] The EPA official also cited another case under investigation by EPA; in that case, indications are that a company, among other things, misstated lead usage, which may have resulted in an overstatement of lead rights.

In order to gain some additional insight into the validity of reported amounts of leaded gasoline produced and lead used and the resulting lead rights earned, we made two tests of these items. In an attempt to obtain some corroboration of the data reported to EPA, we obtained leaded gasoline production data reported to DOE/EIA[2] and compared it with data reported to EPA for the second quarter of 1985. We were able to identify 160 refineries as having reported to both DOE/EIA and EPA. Our comparison showed that for 146, or 91 percent, of the refineries, production figures reported to EPA were lower or not more than 10 percent of the figures reported to DOE/EIA. (We chose 10 percent as a trigger for follow-up to allow for some differences between DOE/EIA and EPA data attributable to rounding and blending operations.)

For 11 of those refineries with differences in excess of 10 percent, we contacted the companies to attempt to reconcile the differences. For five

[1]Under EPA's lead phasedown regulations that preceded banking, refiners were required to file quarterly reports with EPA showing, among other things, gasoline production and lead content.

[2]DOE/EIA, an independent statistical agency within DOE, obtains energy information from individual respondents in various parts of the public and business community.

of the refineries, refinery officials explained that the differences were attributable to blending operations (blending gasoline components, usually acquired from others, into finished gasoline) that are not reported to DOE/EIA but are reported to EPA. Two refiners told us that the DOE/EIA production data were incorrect and provided production figures that brought the data into agreement. Another refinery has not yet reponded to our inquiry. In the three remaining cases, the companies could not explain the differences.

In two of the latter three cases, production data reported to EPA were about 44 million gallons more than reported to DOE/EIA. The company explained that most of the difference resulted from reporting to DOE under an incorrect identification number and from blending operations not reported to DOE. However, the company could not explain the remaining difference of about 2.5 million gallons. We estimate the company could have earned from 1.1 million to 2.8 million grams of lead rights on this difference in production. In the second case, EPA figures were about 9.5 million gallons more than DOE/EIA's. The company explained that 5.7 million gallons resulted from blending operations, but could not explain the remaining 3.8 million gallon difference. On this difference we estimate that the company could have earned from 1.1 million to 4.2 million grams of lead rights.

To test for indications that refiners may be underreporting lead used in production, we compared second quarter 1985 lead purchases as reported to EPA by a random sample of 128 of 195 refiners with sales of lead to these refiners as reported by the lead manufacturers to EPA. Of the 128 refineries, 37 reported purchasing more lead than reported by the manufacturer while 11 refiners reported buying less. The remaining refiners reported amounts agreeing with the manufacturer's reports. According to EPA officials, the differences often are attributable to refiners and manufacturers reporting transactions in different time periods.

EPA has recognized the potential for misstating gasoline produced and lead used and the need for a system to detect the misstatements. In a March 15, 1985, memorandum to the Program Management Office, Office of Mobile Sources (OMS) on OMS's fiscal year 1987 program initiatives, the Director of OMS's Field Operations and Support Division observed that the increasingly restrictive lead standard has increased the incentives to cheat on the rules and suggested the need for a program to audit participants to assure compliance with lead phasedown requirements. He further observed that the increased value of lead

could encourage refiners to use more lead or to overstate leaded production volume in order to claim more lead rights. He also noted that there had been isolated reports that this had already happened.

Further, the Director concluded that each group of participants—refiners, blenders, and importers—presented unique enforcement problems. As a result, he contemplated developing the following enforcement techniques:

- Refiners. Check production volumes using contacts with state governments and on-site inspections.
- Blenders. Make on-site records checks.
- Importers. Cross-check data bases with the U.S. Customs Service and DOE and actually test lead content of imports.

EPA officials told us that they had considered verifying lead content and/or gasoline production by obtaining data from several sources, such as state tax records, DOE, and the U.S. Customs Service. According to the Chief, Field Operations and Compliance Policy Branch, EPA had hoped to use state tax records as a source to verify production data. He said, however, that the state tax data was on gasoline sales, not production, and was not suitable for verifying production.

This official also said EPA staff had contacted DOE to obtain refiner production data, but DOE would not disclose the data on a refinery-specific basis because of the confidential nature of the data. DOE's policy on disclosure of individually identifiable energy information precludes disclosing refiner production data to other federal agencies, except under certain circumstances (45 Fed. Reg. 59812 (1980). None of these conditions applied to providing the refinery data to EPA.

According to the Chief of EPA's Fuels Section, Field Operations and Compliance Policy Branch, DOE also obtains data, not considered to be confidential, from U.S. Customs on importers and has agreed to provide these data to EPA. According to this official, EPA obtained such data on one importer for use during a recent EPA investigation of the importer's operations. The Chief, Investigations and Enforcement Branch, also told us that his staff is working with U.S. Customs on a possible exchange of information. He said they are trying to determine what data each agency has that would be of benefit to the other and how it might be exchanged.

In February 1986, EPA contracted with a consultant to develop an audit methodology to review refiners' operations. EPA's Chief, Investigations and Enforcement Branch, told us on June 16, 1986, that the contractor has prepared a draft of the procedures, but they have not yet been finalized. He said, however, that EPA has performed audits at four refineries as the result of information received on possible lead phasedown violations at the refineries. He also said EPA plans to complete five more audits by September 1986.

Amount of Lead Rights Earned by Refineries Is Unknown to EPA

As of June 16, 1986, EPA had not completed processing and reviewing reports for the first year of the program. Although the period for generating lead rights ended on December 31, 1985, EPA has no firm data on the balance of lead rights available for use in calendar years 1986 and 1987. Furthermore, refiners have been making frequent errors in reporting banking activity, which must be identified and corrected by EPA. Since refiners began using and transferring lead rights in April 1985, these errors may have resulted in the use or transfer of invalid rights. As the bank balances are depleted during 1986 and 1987, it will be increasingly difficult to adjust balances for the use or sale of invalid rights because no new rights can be earned. Additionally, a continuing backlog in reviewing refiners' reports could result in EPA relying on incorrect information when complying with a congressional requirement to monitor actual lead content and report to the Congress if the lead content falls below an average of 0.2 gplg (Public Law 99-198).

As of June 16, 1986, EPA did not have current, complete data on the total lead rights available for use through 1987 or on the balance of individual refineries. EPA had completed initial processing of quarterly reports through the quarter ending December 1985 and was processing reports for the first quarter of 1986, but EPA has not completely reconciled these data.

Refineries frequently make errors in their reports on banking transactions, which require EPA identification and correction. The latest available EPA error reports on first and second quarter data show a number of unresolved discrepancies in reported data. For example, the first quarter report shows, among other things, that 22 refineries reported purchasing approximately 70 million grams of lead rights with no equivalent claim by the identified seller and that 27 refineries reported sales of approximately 50 million grams of lead rights with no equivalent claim by the identified buyer. A second quarter report showed similar discrepancies as well as other discrepancies. For example, on the basis

of information in the quarterly reports, the error report showed that 25 refineries had incorrectly computed the amount of lead rights deposited to their bank accounts by about 38 million grams. The report also showed that 35 refineries were in apparent violation of lead standards and that 32 refineries reported beginning bank balances that did not equal the ending balances for the previous quarter. Third quarter error reports show similar discrepancies.

According to the Chief of EPA's Data Management and Analysis Section, some of these discrepancies have already been corrected. However, he said the correct status will not be reflected until all corrections are entered into the computer and a more current error report is generated.

To gain additional insight into the frequency and type of errors being made by refineries, we randomly sampled second quarter reports. Our sample of 374 of 724 reports showed that 132, or 35 percent, contained errors. The distribution of errors among refiners, blenders, and importers was 36.4 percent, 49.2 percent, and 14.4 percent, respectively.

Of the reports containing errors, 53 reports would have resulted in about 5 million grams of excess lead rights being created if not corrected by EPA. The remaining reports, while containing errors such as not filling in certain line items on the report, incorrectly computing constructive lead average, and rounding incorrectly, would not have resulted in excess lead being created. EPA could correct the errors by adjusting bank balances downward if there are sufficient lead rights in the bank.

However, in two cases refineries sold erroneous rights before EPA review detected the errors and adjusted the balances. According to an EPA official, in one case during the third quarter a refiner used 1.10 gplg in computing lead rights instead of the allowable 0.50 gplg (the standard had decreased on July 1, 1985). EPA identified this error in reviewing third quarter reports; and since the fourth quarter reports had already been submitted, EPA found that the refinery had again used the 1.10 gplg during the fourth quarter. During this quarter, the refinery also sold lead rights from those generated during the fourth quarter as well as some from the third quarter. After EPA recomputed the correct lead rights, the company was left with a negative bank balance of 428,000 grams. According to the EPA official, the purchaser of the rights has been notified not to transfer or use the rights because they had been computed improperly.

In another case, during the second quarter of calendar year 1985, a refiner reported buying approximately 2 million more grams of lead rights from two sellers than reported by the sellers. During the second and third quarters this buyer had sold most of these rights, which decreased his bank balance to 648 thousand grams. However, if the 2 million grams of lead rights are invalid, the buyer would have no valid rights in his account that could be used to adjust for the sale of the invalid rights. Both of these cases are being reviewed by EPA for enforcement action.

Prompt review and processing of quarterly reports and reconciliation of previously processed data are becoming increasingly important because the period for generating lead rights ended on December 31, 1985. Companies not meeting lead standards in calendar years 1986 and 1987 will have to rely on existing bank balances for needed lead rights or purchase them from others. Accordingly, as the balances are depleted it may be increasingly difficult to adjust the balances for erroneously computed rights.

A continuing backlog in reviewing quarterly reports could also result in EPA relying on incorrect data in fulfilling the congressional mandate to report to the Congress if the actual lead content of leaded gasoline falls below an average of 0.2 gplg in any quarter. This mandate resulted from concerns expressed by members of the Congress and a farm group, among others, that the 0.10 gplg standard, effective January 1, 1986, might cause damage to engines in some vehicles not designed to operate on unleaded fuel.[3]

In response to these concerns, the Congress enacted legislation in December 1985 which, among other things, requires EPA to monitor the lead content of gasoline for each quarter of calendar years 1986 and 1987 and to report to the Congress and provide a notice in the Federal Register if the actual average lead content falls below 0.2 gplg in any quarter.

Several factors have contributed to the backlog in processing reports and reconciling banking data. First, according to EPA officials, with the advent of banking, the number of companies reporting leaded gasoline production and lead used increased. The number more than doubled

[3]Lead provides a crucial engine valve lubricating function that prevents a mechanical damage problem called valve recession in vehicles not designed with hardened valve seats to operate on unleaded fuels. For a further discussion of this issue, see Air Pollution: EPA's Efforts to Reduce and End the Use of Lead in Gasoline (GAO/RCED 86-80FS, March 12, 1986).

from about 400 in December 1984 to about 900 in June 1985.[4] Also, perhaps because of the complexity of the quarterly report and the companies' unfamiliarity with the new reporting form, the companies were making numerous errors requiring EPA to contact them to correct the reports.

Additionally, according to EPA officials, computer programming and processing problems complicated, in several respects, the processing and reconciliation of data. For example,

- During the first quarter, the computer was not programmed to detect mathematical errors in the reports at the time of data entry. Therefore, mathematically incorrect data could be entered into the data base.
- The computer data base containing refinery identification numbers, names, and addresses was not always kept current. Therefore, the periodic error report would list some companies processed during the quarter as not being in the data base, thus indicating a potential problem with the current quarterly report and requiring manual verification.
- Discrepancies between values computed by the refiners and computer-determined values were identified as errors when the discrepancies were actually the result of rounding. According to an EPA official, such discrepancies are not significant and would not be revised.
- The computer was not programmed to handle a special situation with respect to California refiners. Consequently, it consistently indicated errors because the California standard of 0.8 gplg had apparently been exceeded during the first 2 calendar quarters of 1985 when the EPA standard was 1.1 gplg.

According to the Chief of EPA's Data Management and Analysis Section, staffing levels also contributed to the problem. One staff member reviewed reports manually for mathematical accuracy and completeness and followed up with the refineries to resolve errors; computer entry and processing was handled by two part-time staff members. Also, he said that responsibility for resolving computer-detected errors or discrepancies was not clearly defined, and consequently the errors were not resolved in a timely manner.

EPA is aware of the need to clear the backlog and has taken or plans to take several actions that it expects will expedite the process. In March

[4]Under EPA's lead phasedown regulations, which preceded banking, refiners were required to file quarterly reports with EPA showing, among other things, their production and lead content.

1986, EPA contracted for a full-time computer analyst. EPA also eliminated the manual verification of mathematical accuracy and has assigned responsibility for resolving errors. It has also made revisions to the computer processing procedures.

In order to provide timely information for the required reporting to the Congress on the average lead content of gasoline, EPA, in April 1986, initiated a supplementary process to accumulate data on the lead used in production and the amount of gasoline produced. An EPA summary of this data shows that the average lead content of gasoline for the first quarter of 1986 (based on 97 percent of the estimated production) exceeded the 0.2 gplg specified in the legislation.

According to the Chief of EPA's Data Management and Analysis Section, some of the items appearing in the respective first and second quarter error reports have been resolved. However, EPA is concentrating on processing and resolving discrepancies in third quarter data. When this is done, the Chief hopes to reconcile second quarter data but doubts the first quarter discrepancies will ever be resolved.

Enforcement Actions Not Initiated for Violations

As of June 16, 1986, EPA had not yet taken enforcement actions for banking violations because it had not established an enforcement policy for the lead rights banking program. Authority to enforce the program regulations is provided by the Clean Air Act, section 211(d), which provides penalties for violations of EPA's fuel and fuel additive regulations. This section prescribes a civil penalty, to be recovered in a civil suit in district court, of $10,000 for each day the violation continues. The act allows the EPA Administrator to reduce or eliminate the penalty sought upon application by a violator.

EPA considers the following actions to be violations of the banking regulations:

- banking unearned lead rights,
- transferring unearned lead rights,
- using unearned lead rights,
- transferring lead rights after the end of the quarter in which they were used to demonstrate compliance,
- using lead rights after December 31, 1987, and
- violating reporting requirements.

According to the Chief of EPA's Investigations and Enforcement Branch, several factors being considered in developing an enforcement policy are the enforcement actions to be taken, the penalties to be assessed, and a determination of the parties against whom and under what circumstances an action will be taken. For example, in the event of a transfer of unearned lead rights, should action be taken against the transferor, the transferee, or both, and what penalty should be assessed? This official told us that a policy statement setting forth program violations and enforcement actions is being drafted and is expected to be finalized soon. He said that as soon as the policy is finalized, EPA will begin actions on the banking cases referred to enforcement.

He attributed the delay in developing a policy primarily to other enforcement and investigation activities—such as investigations of fuel switching (using leaded gasoline in vehicles designed for unleaded gasoline)—which used available staff time.

According to the Chief of Investigations and Enforcement, the absence of a policy has not had a significant effect on the program, primarily because until the end of March 1986 only two cases had been referred for enforcement action. These cases, as discussed previously (see p. 19), involved a disagreement between a buyer and seller of lead rights over the amount of rights sold and banking excess rights and subsequently selling them. They were referred for enforcement in December 1985 and February 1986. In March 1986 the Field Operations and Compliance Policy Branch forwarded for action 23 transactions from the first quarter of 1985 as potential violations.

Conclusions

EPA established the lead rights banking program in connection with its regulations that significantly reduced the allowable lead content of gasoline. The purpose of the program is to provide additional flexibility to refineries in meeting the more stringent lead standards.

EPA's review of the quarterly reports determines the mathematical accuracy of data reported by refineries and identifies violations of the lead banking regulations that are evident from the reports themselves. EPA also requires supporting documentation on the sales and purchases of rights. However, EPA has not yet established a requirement to verify the accuracy of data reported on leaded gasoline produced and lead content. Further, EPA has not completed reviews and processing of data for the first year of the program. Thus, EPA does not have current, complete data on the balance of lead rights banked or the balance of individual

refineries, even though the period for generating rights ended on December 31, 1985. EPA also has not taken enforcement actions on cases of potential violations because it has not yet developed an enforcement policy.

Beginning on April 1, 1985, refiners began to use or transfer lead rights from their bank accounts. This process will continue until December 31, 1987, at which time the program will be terminated. Consequently, there is urgency in ensuring that lead rights claimed by refiners are valid, that all reports are reviewed and processed by EPA, and that enforcement actions are taken as quickly as possible. Refiner balances will tend to diminish after calendar year 1985, leaving fewer opportunities to adjust balances for errors as has been done in the past.

Consequently, erroneously reported data, the backlog in reviewing, processing and reconciling reports, and delays in initiating enforcement actions have the potential of resulting in lead in excess of standard being released into the atmosphere, thus creating increased hazards to the public and diminishing the benefits anticipated from the lead phasedown program. EPA has recognized these control problems and has taken a number of actions to address them. It has obtained an agreement with DOE to provide data on importer production and is working with U.S. Customs to exchange data on importers. It has contracted with a consultant to develop a methodology to audit refiners' production and lead content and plans refiner audits.

In an attempt to clear the backlog in reviewing and processing refiners' reports, EPA has contracted for a full-time computer analyst, eliminated manual verification of mathematical accuracy, established responsibility for resolving discrepancies in data, and is revising computer processing procedures. EPA has also drafted an enforcement policy and anticipates initiating enforcement actions as soon as the policy is finalized.

Recommendations

We recommend that the EPA Administrator establish specific time frames to develop (1) a methodology for auditing refiners to verify reported data and assure compliance with program requirements, and initiate such audits promptly and (2) an enforcement policy, including the identification of program violations, enforcement actions to be taken, and the penalties to be assessed, and take appropriate actions against identified program violators.

Because the lead rights banking program is scheduled to end by December 31, 1987, the time is short to strengthen lead banking program controls to prevent excess lead from being emitted into the atmosphere. Accordingly, we also recommend that the EPA Administrator require periodic reviews or assessments of agency actions being taken in response to our recommendations as well as agency actions taken to expedite the review, processing, and reconciliation of refiners' reports. If satisfactory progress is not being made, the Administrator should take other actions, such as providing additional staff and/or further modifying computer capabilities.

Legal Authority for Lead Banking Program

EPA bases its authority for the lead banking program on a provision of the Clean Air Act authorizing the EPA Administrator to control or prohibit the manufacture, introduction into commerce, or sale of any fuel or fuel additives that may endanger public health or welfare or impair the performance of emission control devices. (Clean Air Act, § 211(c)(1).) The EPA Administrator is authorized by the act to prescribe such regulations as are necessary to carry out these functions under the act. (Clean Air Act, § 301(a)(1).) EPA's authority to issue regulations to control the amount of lead in gasoline has been upheld in federal court cases. When EPA, in March 1985, issued a regulation reducing the existing lead content standard, it established the lead banking program in furtherance of and to facilitate industry compliance with the new, more stringent standard. The banking program was designed to ease the cost burden and provide flexibility for a short time period, until the new standard was completely phased in.

Although banking and trading credits, or other types of averaging for compliance with federal environmental standards, are not specifically mentioned in the Clean Air Act, an EPA program similar to lead banking, also promulgated under section 211(c) (interrefinery averaging), was endorsed by a federal appeals court. Also, a plant-wide definition of the term "stationary source," under which all of the pollution-emitting devices within the same industrial grouping are treated as if they were encased within a single "bubble" by offsetting increased emissions from new or modified equipment with emission reductions from other equipment (the "bubble" concept), promulgated under an analogous provision of the Clean Air Act, has been upheld by the Supreme Court.

The lead banking regulation was promulgated as a revision to EPA's lead content regulations. As required by the Administrative Procedure Act, the banking final regulation was issued following a notice of proposed rulemaking, a public hearing, and a 30-day comment period.

Conclusion

EPA has legal authority for implementing the lead banking program. The lead banking regulation was based on adequate statutory authority, and EPA has followed the procedural requirements of the Administrative Procedure Act.

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Lead Additive Report for Refinery

US Environmental Protection Agency
Washington, DC 20460

EPA **Lead Additive Report For Refinery**

1. EPA Use Only — Form Approved OMB NO. 2060-0066 Approval expires 3-31-87

2. Date Received: Month / Day / Year — By (initials)

3. Name of Refinery — Location of Refinery — EPA ID No.

4. City — 5 — State — 6

Reporting Period: From Month / Day / Year — To 7: Month / Day / Year — If information called for in items 9 through 19 has not changed since the last report, mark "X" in square and proceed directly to item 20. — 8

9. Operated by — 14. Owned or Controlled by

10. Street Address — 15. Street Address

11. City — 12 — State — 13 — ZIP Code — 16. City — 17 — State — 18 — ZIP Code

19. Principal Location of Facility (Street address)

Lead, in kilograms (thousands of grams)

20. Initial inventory	20		Kg
21. Received from additive manufacturers	21		Kg
22. Received from other than additive manufacturers (from item 10 of Supplement B)	22		Kg
23. Shipped to additive manufacturers	23		Kg
24. Shipped to other than additive manufacturers (from item 13 of Supplement B)	24		Kg
25. Final inventory	25		Kg
26. Actually used in production (20 + 21 + 22 — 23 — 24 — 25)	26		Kg
27. Constructively allocated to other(s) ("lead rights" bought) (From item 10 of Supplement A)	27		Kg
28. Constructively allocated from other(s) to refinery ("lead rights" sold) (from item 13 of Supplement A)	28		Kg
29. Constructively used by refinery in production (26 — 27 + 28)	29		Kg

Banking Transactions, in kilograms of lead usage rights

30. Withdrawal from bank	30		Kg
31. Deposit to bank	31		Kg
32. Constructive lead use net of banking (29 — 30 + 31)	32		Kg

Gasoline, in thousands of gallons

33. Unleaded production in reporting period	33		K gal
34. Leaded production in reporting period	34		K gal

Average, in grams per gallon

35. Actual average (26 — 34)	35		gpg
36. Constructive average (32 — 34)	36		gpg

Bank Balances, in kilograms of lead usage rights

37. Balance brought forward prior to transactions this reporting period	37		Kg
38. New balance (37 — 30 + 31)	38		Kg

This report is required by law (42 USC §7545; 40 CFR 80.20). Failure to report lead usage to EPA can result in a fine of up to $10,000 per day for each report not submitted (42 USC §7545). The business may, if it desires, assert a business confidentiality claim covering part or all of the information submitted. If no such claim accompanies the information when it is received by EPA, it may be made available to the public by EPA without further notice. All questions of confidentiality will be handled pursuant to 40 CFR Part 2.

39. Mark "X" in box if confidentiality is claimed. ☐

Report Submitted By

Typed or Printed Name and Title — Telephone Number (Include Area Code)

Signature — Date

Send completed report to:

Director, Field Operations and Support Division (EN-397F)
US Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

EPA Form 3520-2 (Rev. 5-86) Previous editions are obsolete.

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US ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

EPA

LEAD ADDITIVE REPORT SUPPLEMENT A: CONSTRUCTIVE ALLOCATIONS

EPA USE ONLY	1	A	Form Approved. OMB No. 2060-0065 Approval expires 3-31-87
DATE RECEIVED	2		Month / Day / Year
BY (Printed or typed name)			(Initials)

NAME OF REPORTING ORGANIZATION	SHEET NUMBER	OF
5	3	4

EPA ID NO.	REPORTING PERIOD					
	From			To		
	Month	Day	Year	7	Month	Day	Year
6						

CONSTRUCTIVE ALLOCATIONS TO OTHERS

NAME OF OTHER ORGANIZATION	LOCATION	EPA ID NO. 8	LEAD ALLOCATION – Kg 9
			Kg
			Kg
			Kg
			Kg
			Kg
			Kg
			Kg
			Kg
			Kg

TOTAL LEAD ALLOCATED TO OTHERS *(If refinery, enter in field 27 of Lead Additive Report for Refinery, EPA Form 3520-2)* *(If importer, enter in field 17 of Lead Additive Report for Gasoline Importer, EPA Form 3520-5)*	10	Kg

CONSTRUCTIVE ALLOCATIONS FROM OTHERS

NAME OF OTHER ORGANIZATION	LOCATION	EPA ID NO. 11	LEAD ALLOCATION – Kg 12
			Kg
			Kg
			Kg
			Kg
			Kg
			Kg
			Kg
			Kg
			Kg
			Kg

TOTAL LEAD ALLOCATED FROM OTHERS *(If refinery, enter in field 28 of Lead Additive Report for Refinery, EPA Form 3520-2)* *(If importer, enter in field 18 of Lead Additive Report for Gasoline Importer, EPA Form 3520-5)*	13	Kg

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US Environmental Protection Agency
Washington, DC 20460

EPA

Lead Additive Report
Supplement B:
Transfers of Lead to and from Other Than Lead Additive Manufacturers

1 EPA Use Only				Form Approved OMB No. 2060-0065 Approval expires 3-31-87
2 Date Received	Month	Day	Year	By (Initials)
3 Sheet Number			4 of	

5 Name of Reporting Organization	6 EPA ID No	7 Reporting Period						
		From	Month	Day	Year	To	Month	Day	Year

Lead Received from Others in Materials Other Than Finished Gasoline *(see instructions for this line on reverse)*

Material	Received from	8 EPA ID No	9 Kilograms of Lead	
				Kg
				Kg
				Kg
				Kg
				Kg
				Kg

Total Lead Received from Others in Materials Other Than Finished Gasoline 10 Kg
(Enter on line 22 of Lead Additive Report for Refinery, EPA Form 3520-2 or, for importers, enter on line 17a of Lead Additive Report for Gasoline Importers, EPA form 3520-5)

Lead Shipped to Others in Materials Other Than Finished Gasoline

Material	Sent to	11 EPA ID No	12 Kilograms of Lead	
				Kg
				Kg
				Kg
				Kg
				Kg
				Kg
				Kg

Total Lead Shipped to Others in Materials Other Than Finished Gasoline 13 Kg
(Enter on line 24 of Lead Additive Report for Refinery, EPA Form 3520-2 or, for importers, enter on line 18a of Lead Additive Report for Gasoline Importer, EPA form 3520-5)

EPA Form 3520-6B (Rev. 8-85) Previous edition is obsolete

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